ICF International / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
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MEMORANDUM

TO: Chris Lichens, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Task Order Manager (TOM) RF
Quality Assurance (QA) Program, PMD-3

FROM: Doug Lindelof, Data Review Task Manager
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No.: EP-W-06-041
Technical Direction Form No.: 00105041 Amendment 3

DATE: March 14, 2007

SUBJECT: Review of Analytical Data, Tier 2

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

Site:	Omega Chem OU2
Site Account No.:	09 BC LA02
CERCLIS ID No.:	CAD042245001
Case No.:	None
SDG Nos.:	IPH2899, IPH3042, IPH3163, IPI0104, IPI0246, IPI0558, IPI0711, and IPI0851
Laboratory:	Test America Analytical Testing Corp.
Analysis:	Hexavalent Chromium
Samples:	39 Groundwater Samples (see Case Summary)
Collection Dates:	August 28, 29, 30, September 1, 5, 7, 8, and 11, 2006
Reviewer:	Stan Kott, ESAT/Laboratory Data Consultants

This report has been reviewed by the EPA TOPO for the ESAT contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.: None
SDG Nos.: IPH2899, IPH3042, IPH3163, IPI0104, IPI0246, IPI0558, IPI0711, and IPI0851
Site: Omega Chem OU2
Laboratory: Test America Analytical Testing Corp.
Reviewer: Stan Kott, ESAT/LDC
Date: March 1, 2007

I. CASE SUMMARY

Sample Information

SDG IPH2899 Samples:	OC2-MW18C-W-0-209, OC2-MW18B-W-0-210, OC2-MW18A-W-0-211, and OC2-MW7-W-0-212
SDG IPH3042 Samples:	OC2-MW4C-W-0-214, OC2-MW4B-W-1-215, OC2-MW4B-W-1-216, OC2-MW4A-W-5-217, OC2-MW5-W-0-218, and OC2-MW15-W-0-219
SDG IPH3163 Samples:	OC2-MW8D-W-0-222, OC2-MW8C-W-0-223, OC2-MW8B-W-0-224, OC2-MW8A-W-0-225, and OC2-MW6-W-0-226
SDG IPI0104 Samples:	OC2-MW20C-W-0-234, OC2-MW20B-W-0-235, OC2-MW20A-W-0-236, OC2-MW20A-W-1-237, OC2-MW9B-W-0-238, and OC2-MW9A-W-0-239
SDG IPI0246 Samples:	OC2-MW17C-W-0-243, OC2-MW17B-W-5-244, and OC2-MW17A-W-0-245
SDG IPI0558 Samples:	OC2-MW19-W-0-246, OC2-MW11-W-0-247, OC2-MW3-W-0-248, OC2-MW10-W-0-249, OC2-MW10-W-1-250, and OC2-MW2-W-0-251
SDG IPI0711 Samples:	OC2-MW13B-W-0-253, OC2-MW12-W-0-254, OC2-MW1B-W-0-255, and OC2-MW1A-W-0-256
SDG IPI0851 Samples:	OC2-MW23D-W-0-259, OC2-MW23D-W-0-260, OC2-MW23C-W-0-261, OC2-MW23C-W-1-262, and OC2-MW14-W-0-263
Concentration and Matrix:	Low Concentration Groundwater
Analysis:	Hexavalent Chromium
Method:	EPA Method 218.6
Collection Dates:	August 28, 29, 30, September 1, 5, 7, 8, and 11, 2006
Sample Receipt Dates:	August 28, 29, 30, September 1, 5, 7, 8, and 11, 2006
Preparation Dates:	August 28, 29, 30, September 1, 5, 7, 8, and 11, 2006
Analysis Dates:	August 28, 29, 30, September 1, 5, 7, 8, and 11, 2006

Field QC

Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	OC2-MW4B-W-0-215 and OC2-MW4B-W-1-216
Field Duplicates (D2):	OC2-MW20A-W-0-236 and OC2-MW20A-W-1-237
Field Duplicates (D3):	OC2-MW10-W-0-249 and OC2-MW10-W-1-250
Field Duplicates (D4):	OC2-MW23C-W-0-261 and OC2-MW23C-W-1-262

Laboratory QC

Method Blanks (MB):	MB
Associated Samples:	Samples listed above
Matrix Spike (MS)/MS Duplicate (MSD):	OC2-MW18C-W-0-209MS/MSD, OC2-MW4A-W-5-217MS/MSD, IPH3077-04MS/MSD (See Additional Comments), OC2-MW9A-W-0-239MS/MSD, OC2-MW17B-W-5-244MS/MSD, OC2-MW19-W-0-246MS/MSD, IPI0692-01MS/MSD (See Additional Comments), and OC2-MW23D-W-0-259MS/MSD
Duplicates:	MSD samples listed above
Analysis:	Hexavalent Chromium

Analyte	Sample Preparation Date	Analysis Date
Hexavalent Chromium	August 28, 2006	August 28, 2006
	August 29, 2006	August 29, 2006
	August 30, 2006	August 30, 2006
	September 1, 2006	September 1, 2006
	September 5, 2006	September 5, 2006
	September 7, 2006	September 7, 2006
	September 8, 2006	September 8, 2006
	September 11, 2006	September 11, 2006

Sampling Issues

The chain of custody (COC) record forms indicate "ascorbic acid" or "HCL" for hexavalent chromium sample preservation. Additional information indicates the sample preservation on the COC was incorrect. See Attachments.

The Chain of Custody (COC) record forms for SDGs IPH2899, IPH3163, IPI0104, IPI0558, IPI0711, and IPI0851 did not specify a sample to be used for laboratory quality control (QC). As a result, the laboratory selected samples OC2-MW18C-W-0-209, IPH3077-04, OC2-MW9A-W-0-239, OC2-MW19-W-0-246, IPI0692-01, and OC2-MW23D-W-0-259, respectively, for QC analysis. The effect on data quality is not known.

Additional Comments

As directed by the EPA TOM, a Tier 2 data review was performed (review all QC results and calibrations, minus calculation check). A Table 1A is not requested.

For the August 10, 2006 calibration curve, the calculated percent difference (%D) for calibration standards 0.30 µg/L and 1.0 µg/L are -42 %D and -19 %D, respectively, and exceed the 10% limit. The 10% limit was derived from the ±10% limit used in method 218.6 to determine the linear dynamic range upper limit. The low %Ds indicate that the calibration may not be linear at the low end of the curve. Since the analytical method does not require analysis of a reporting limit (RL) standard to confirm linearity of the calibration curve at the 0.30 µg/L RL, the 0.00062 mg/L result for sample OC2-MW18C-W-0-209, 0.0046 mg/L result for sample OC2-MW18A-W-0-211, and 0.0047 mg/L result for sample OC2-MW17-W-0-212 may be biased low.

For the August 31, 2006 calibration curve, the calculated %D for calibration standard 0.30 µg/L is 23 %D and exceeds the 10% limit. The 10% limit was derived from the ±10% limit used in method 218.6 to determine the linear dynamic range upper limit. The high %D indicates that the calibration may not be linear at the low end of the curve. Since the analytical method does not require analysis of a RL standard to confirm linearity of the calibration curve at the 0.30 µg/L RL, the 0.00052 mg/L result for sample OC2-MW23C-W-0-261 and 0.00057 mg/L result for sample OC2-MW23C-W-1-262 may be biased high.

The following sample chromatograms were manually re-integrated: ICV (August 10, 2006), CCV1 (August 29, 2006), OC2-MW15-W-0-219 (August 29, 2006), OC2-MW6-W-0-226 (August 30, 2006), and OC2-MW20B-W-0-235 (September 1, 2006). The reasons for the re-integrations were not provided in the Case Narrative. No adverse effect on data quality is expected.

The laboratory analyzed the laboratory control sample (LCS) at a 0.050 mg/L concentration not the 0.10 mg/L concentration specified in the method. No adverse effect on data quality is expected.

For SDGs IPH3163 and IPI0711, the laboratory selected samples IPH3077-04 and IPI0692-01, respectively, for laboratory QC analysis. Although matrix spike and duplicate results met criteria, these samples are from different SDGs and may not reflect the matrix characteristics of the samples in SDGs IPH3163 and IPI0711. The effect on data quality is not known.

Initial and continuing calibration blank data were not provided in the data package and could not be evaluated. The effect on data quality is not known.

Note that hexavalent chromium results are reported in mg/L instead of µg/L as specified in the method. No adverse effect on data quality is expected.

This report was prepared in accordance with the following documents:

- Region 9 Standard Operating Procedure 906, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Inorganic Data Packages*;
- *Methods For The Determination Of Metals In Environmental Samples*, EPA-600/4-91-010, June 1991; and

- *USEPA Method 218.6, Determination of Dissolved Hexavalent Chromium in Drinking Water, Groundwater, and Industrial Wastewater Effluents by Ion Chromatography*, Revision 3.3, May 1994.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	Parameter	Acceptable	Comment
1.	Data Completeness	Yes	
2.	Sample Preservation and Holding Times	Yes	
3.	Calibration	Yes	
	a. Initial		
	b. Initial and Continuing Calibration Verification		
4.	Blanks	Yes	
5.	Laboratory Control Sample (LCS)	Yes	
6.	Duplicate Sample Analysis	Yes	
7.	Matrix Spike Sample Analysis	No	A
8.	Field Duplicate Sample Analysis	Yes	
9.	Sample Quantitation	Yes	
10.	Overall Assessment	Yes	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A. The non-detected result for sample OC2-MW19-W-0-246 is estimated and should be flagged "J" because matrix spike (MS) and MS duplicate (MSD) recovery results are outside the 90-110% recovery limits. The percent recoveries for hexavalent chromium are presented below and are based on an ideal recovery of 100%.

Sample	% Recovery
OC2-MW19-W-0-246MS	11
OC2-MW19-W-0-246MSD	12

According to the method, if the hexavalent chromium spike recovery results fall outside the 90-110% control limits and the laboratory fortified blank (LFB) result is within control limits, the sample matrix is considered suspect and the low MS/MSD recoveries are considered a matrix related problem and not an analytical system problem.

The matrix spike sample analysis provides information about the effect of the sample matrix on the digestion and measurement methodology.

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR INORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared in accordance with the document *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, October 2004.

U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Rose Fong/R9/USEPA/US
02/28/2007 09:49 AM

To Stan Kott/R9/USEPA/US@EPA
cc
bcc
Subject Omega Chem TestAmerica CRL response

History: This message has been forwarded.

---- Forwarded by Rose Fong/R9/USEPA/US on 02/28/2007 09:48 AM ----

Victoria.Taylor@CH2M.com
02/28/2007 08:45 AM

To Rose Fong/R9/USEPA/US@EPA
cc Daniel.Jablonski@CH2M.com, tom.perina@ch2m.com
Subject FW: Request for Additional Information

I got a response from Test America on the sample preservation issues. They provided the bottle order that indicates how the bottles for the different test methods were preserved. It appears that the COC was incorrectly filled out.

Hopefully this will be enough to resolve the validation issues. Thanks VT

From: Diane Suzuki [mailto:dsuzuki@testamericainc.com]
Sent: Wednesday, February 21, 2007 3:08 PM
To: Taylor, Victoria/BAO
Cc: Jablonski, Daniel/LAC; Perina, Tom/RIV
Subject: RE: Request for Additional Information

Hi Vikki
I started to go through the various workorders, but I thought it would be easier to send you the bottle order that was submitted for this around of sampling. Please note on the bottle order the HCL preservative with the ascorbic acid is not visable. While the method 524.2 allows sodium thiosulfate and HCl as a dechlorinating agent/preservative pair, we have found that it actually damages the trap on the instrument. For this reason, we have been trying to use Ascorbic Acid and HCl exclusively. The HCl is required for THMs when Ascorbic Acid is used.

For the your COC that has HCL only, I believe that due to space limitation, your sampler may not have entered all of the information.

...diane

Date Printed: 8/16/2006 6:02:02AM

BOTTLE ORDER DELIVERY (ALTERNATE ADDRESS)

TESTAMERICA - IRVINE, CA
17461 Derian Avenue, Suite 100
Irvine, CA 92614
Ph: (949) 261-1022 Fax: (949) 260-3297

Date Requested:	08/14/06 8:08PM	**Scheduled Date:**	08/16/06 Anytime
Requested By:	CH2M Hill - Los Angeles	**Client Contact:**	Kerning Sun
Alternate Address:	CH2M Hill - Los Angeles	**Client Phone#:**	(714) 429-2000
	3 Hutton Centre Drive, Ste 200	**Created By:**	Diane Suzuki
	Santa Ana, CA 92707	**Project Manager:**	Diane Suzuki

Miscellaneous Items Requested:

Cooler(s):	Ice:	COCs:	Misc Items:
3 Large Cooler(s)	None	30 Lab COC's	None

Comments:

Cross Streets/Driving Directions: None Supplied
Comments: Ensure that a copy of the 'Sample Acceptance Policy' is included in the cooler(s) for this request!

Qty	Qty Type	Bottle Type	Analysis	Holding Time	Comments
180	60 - Samples	40 ml VOA w/Ascorbic acid Lot Number(s): 051108	524.2 CA 123-TCP (SIM) DMAC-OUT	14 Days	Collect 3 containers per sample. No headspace!
120	60 - Samples	1 L Amber Lot Number(s): H619101DB	NDMA-1625C Mod	7 Days	Collect 2 containers per sample.
60	Samples	500 ml Poly Lot Number(s): None Assigned	Chromium VI EPA 7199	1 Day	
10	Samples	1 L Amber Lot Number(s): H619101DB	NDMA-1625C Mod	7 Days	These are additional containers for MS/MSD QC samples for NDMA. Please collect the desired sample in triplicate.